EXHIBIT R

EXHIBIT 14

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 3 of 26 Page ID #:2030

Entropic Communications, LLC v. Cox Communications, Inc., et al. Case 2:23-cv-01049-JWH-KES (C.D. Cal.)

U.S. Patent No. 11,381,866 (the "'866 Patent") Exemplary Infringement Chart

Cox operates and maintains a nationwide television and data network through which it sells, leases, and offers for sale products and services, including the Technicolor CGM4981, Technicolor CGM4331, Technicolor CGM4141, Technicolor CVA4004, ARRIS / Surfboard TM3402, ARRIS / Surfboard G36, ARRIS / Surfboard G54, ARRIS / Surfboard S33, ARRIS / Surfboard CM8200, ARRIS / Surfboard G34, ARRIS / Surfboard SB8200, ARRIS / Surfboard DG2460, ARRIS TM9202, Hitron CODA56, Hitron CODA, Humax HGD310, Motorola B12, Motorola MB8611, Motorola MG8725, Motorola MB8600, Motorola MG8702, Netgear CM2000, Netgear C7800, Netgear CAX30, Netgear CAX80, Netgear CBR750, Netgear CM1000, Netgear CM1000v2, Netgear CM1100, Netgear CM1200, Netgear CM2500, Netgear CM3000, Ubiquiti UCI, ARRIS / Surfboard TG2472, ARRIS / Surfboard SBG7400AC2, ARRIS / Surfboard SBG7600AC2, Motorola MB7621, Motorola MG7700, Netgear C6900, Netgear C7000v2, Netgear C7500, Netgear CBR40, Netgear CM600, Netgear CM700, TP-LINK TC-7650, ARRIS / Surfboard SB6183, ARRIS / Surfboard SBG6900, Asus CM16, Motorola MB7420, Motorola MG7540, Motorola MG7550, Netgear C6230, Netgear C6250, Netgear C6300, Netgear C6300v2, Netgear CM500, TP-LINK TC-7620, TP-LINK CR500, TP-LINK CR700, TP-LINK CR1900, SMC D3CM1604, Zoom 5370, and products that operate in a similar manner ("Accused Cable Modem Products"), as well as the Arris AX013ANC STB, Arris AX013ANM STB, Pace PX022ANC STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung SX022ANM STB, and products that operate in a similar manner ("Accused Set Top Products"). Cox provides cable television and internet services ("Accused Services") via the lease, sale, and/or distribution of the Accused Cable Modem Products and/or the Accused Set Top Products. Cox literally and/or under the doctrine of equivalents infringes the claims of the '866 Patent by making, using, selling, offering for sale, and/or importing the Accused Services, Accused Cable Modem Products, and/or the Accused Set Top Products.

As shown below in the chart with exemplary support, the Accused Services infringe at least claims 27, 28, 33, 36, 37, 41, 42, 47, 50, and 51 of U.S. Patent No. 11,381,866 ("'866 Patent"). The '866 Patent was filed January 28, 2022, issued July 5, 2022, and is entitled "Cable Television Device." The '866 Patent claims priority to U.S. Patent Application Serial No. 17/217,244, filed on Mar. 30, 2021; U.S. Patent Application Serial No. 16/430,506, filed on Jun. 4, 2019; U.S. Patent Application Serial No. 15/792,318, filed Oct. 24, 2017; U.S. Patent Application Serial No. 14/948,881, filed Nov. 23, 2015, U.S. Patent Application Serial No. 14/617,973, filed on Feb. 10, 2015; U.S. Patent Application Serial No. 13/962,871, filed on August 8, 2013; U.S. Patent Application Serial No. 12/762,900, filed on April 19, 2010; and U.S. Provisional Patent Application No. 61/170,526, filed April 17, 2009.

The Accused Services utilize the claimed device, for example, the Accused Set Top Products. The Accused Set Top Products infringe the claims of the '866 Patent, as described below, either directly under 35 U.S.C. § 271(a), or indirectly under 35 U.S.C. §§ 271(b)–(c).

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 4 of 26 Page ID #:2031

#	U.S. Patent No. 11,381,866	Accused Products and Services
27pre	27. A cable television (TV) device	The Accused Services utilize the claimed cable TV device by using, for example, the Accused
	comprising:	Set Top Products, which include at least one set top box ("STB") located at each sub-scriber
		location, including, for example, the Arris AX013ANC STB, Arris AX013ANM STB, Pace
		PX022ANC STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung SX022ANM
		STB, and products that operate in a similar manner.
		By way of example, the Arris AX013ANM is charted herein. As described below, the Arris
		AX013ANM has a Broadcom BCM33843 SoC. On informed belief, the Arris AX013ANM is
		representative of all Accused Set Top Products, including those having BCM3383, BCM3384,
		BCM33843, or BCM3390 SoCs.
27a	a wideband analog-to-digital con-	The Accused Set Top Products include a wideband analog-to-digital converter (ADC) config-
	verter (ADC) configured to digit-	ured to digitize a contiguous band of frequencies in an input signal, wherein the contiguous band
	ize a contiguous band of frequen-	of frequencies comprises a plurality of desired channels and a plurality of undesired channels as
	cies in an input signal, wherein the	described below.
	contiguous band of frequencies	
	comprises a plurality of desired	Specifically, the Arris AX013ANM, depicted in the following annotated photograph, constitutes
	channels and a plurality of unde-	a cable television device as claimed.
	sired channels;	

#	U.S. Patent No. 11,381,866	Accused Products and Services
		BCM33843 SOC
		The Arris AX013ANM has applicable circuitry and/or software modules constituting a wideband ADC. The Arris AX013ANM digitally tunes and outputs television content using its applicable circuity and/or software modules, for example applicable circuitry and/or software modules located in the Broadcom BCM33843 Full-Band Capture SoC, highlighted in red above. The Arris AX013ANM has full band capture digital tuning technology and remote diagnostics that directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere. The entire downstream spectrum includes a plurality of desired channels and a plurality of undesired channels. "The new BCM3384 DOCSIS®/Euro-DOCSIS™ 3.0 cable gateway SoC combines Broadcom's Full-Band Capture (FBC) digital tuning technology with remote diagnostics, dual-band concur-

#	U.S. Patent No. 11,381,866	Accused Products and Services
		Broadcom's new BCM33843 is pin compatible Broadcom is now sampling [as of Jan 08,
		2013] the BCM3384 and BCM33843"
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002017)
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip tech-
		nology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant,
		providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive
		diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24 downstream channels."
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		(ENTROFIC_COX_002010 at ENTROFIC_COX_002018)
		Discovery will provide detailed information regarding implementation and identification of the
		specific components, source code, software and/or other instrumentalities used to implement the
		claimed method. As additional information is obtained through discovery related to the Accused
		Services and related instrumentalities, Entropic will supplement these contentions.
27b	a digital frontend (DFE) coupled	The Accused Set Top Products include a digital frontend (DFE) coupled to the wideband ADC,
	to the wideband ADC, wherein the	wherein the DFE is configured to concurrently select and provide each of the plurality of desired
	DFE is configured to concurrently	channels without providing any of the plurality of undesired channels, and wherein the cable TV
	select and provide each of the plu-	device comprises a digital video recorder (DVR) as described below.
	rality of desired channels without	
	providing any of the plurality of	Specifically, the Arris AX013ANM has applicable circuitry and/or software modules constitut-
	undesired channels, and wherein	ing a digital frontend that concurrently selects and provides each of the plurality of desired chan-
	the cable TV device comprises a	nels without providing any of the plurality of undesired channels. The Arris AX013ANM has
	digital video recorder (DVR).	applicable circuitry and/or software modules, for example including applicable circuitry and/or
		software modules located in the BCM33843 SoC, constituting a digital frontend and providing full band capture digital tuning technology that directly samples and digitizes the entire 1GHz
		downstream spectrum of a cable plant, providing access to any channel anywhere. The Arris
		AX013ANM is a DVR that can record programming on its hard drive.
		11101011111111111111111111111111111111

#	U.S. Patent No. 11,381,866	Acc	cused Products and Services	
		Full-Band Capture Digital Tune	er Architecture	
		Analog Domain	Digital Domain	
		LNA Full-Band Capture	Demods xN All Digital Tuner	
		(ENTROPIC_COX_002010 at EN	TROPIC_COX_002012)	J
		nology directly samples and digiti providing access to any channel an	technology and remote diagnostics: It zes the entire 1GHz downstream spenywhere. Remote diagnostics provides capabilities, without effecting user set TROPIC_COX_002018)	ectrum of a cable plant, s real time, unobtrusive
		tations of "block" tuners. When con		oC with fast acquisition

#	U.S. Patent No. 11,381,866	Accused Products and Services
		Arris XG1v3 High Definition DVR Receiver
		Share or Print This Article
		Details
		CONTOUR
		Receiver Capabilities
		✓ HD Capable
		✓ Up to 6 simultaneous DVR recordings
		✓ Up to 1000 hours of SD recording
		✓ Up to 500 hours of HD recording
		Note: Estimated storage will vary with a mix of HD and SD recordings.
		(ENTROPIC_COX_001968 at ENTROPIC_COX_001968)
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
28pre	28. The cable TV device of claim	See 27pre.
	27, wherein:	
28a	the cable TV device comprises a	The cable TV device comprises a cable network connector as described below.
	cable network connector, and	

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 9 of 26 Page ID #:2036

#	U.S. Patent No. 11,381,866	Accused Products and Services
#	U.S. Patent No. 11,381,866	Accused Products and Services Specifically, the Arris AX013ANM has a cable network connector, shown in blue in the following annotated photograph.
28b	the input signal is operably com-	BCM33843 SoC RF Input The input signal is operably communicated from the cable network connector to the wideband
28b	municated from the cable network	ADC via at least one of an analog amplifier and an analog filter as described below.
	connector to the wideband ADC	The via at least one of an analog ampiriter and an analog filter as described below.

#	U.S. Patent No. 11,381,866	Accused Products and Services	
	via at least one of an analog ampli-	Specifically, the Arris AX013ANM has applicable circuitry and/or software modules constitut-	
	fier and an analog filter.	ing at least an analog amplifier. For example, the Arris AX013ANM, via applicable circuitry	
		and/or software modules of its BCM33843 SoC, has at least an analog amplifier, highlighted in	
		yellow below.	
		Full-Band Capture Digital Tuner Architecture	
		Analog Domain Digital Domain	
		LNA Demods xN All Digital Tuner	
		(ENTROPIC_COX_002010 at ENTROPIC_COX_002012, annotated)	
		Discovery will provide detailed information regarding implementation and identification of the	
		specific components, source code, software and/or other instrumentalities used to implement the	
		claimed method. As additional information is obtained through discovery related to the Accused	
		Services and related instrumentalities, Entropic will supplement these contentions.	
22	22 The colds TW decise C 1	S 27	
33pre	33. The cable TV device of claim 27, wherein:	See 27pre.	
33a	the DFE comprises a plurality of	The DFE comprises a plurality of digital demodulators as described below.	
	digital demodulators, and		
		Specifically, the Arris AX013ANM has applicable circuitry and/or software modules constitution.	
		ing a plurality of demodulators. For example, the Arris AX013ANM, via applicable circuitry	

#	U.S. Patent No. 11,381,866	Accused Pr	oducts and Services
		and/or software modules of its BCM33843	SoC, has a plurality of demodulators, highlighted in
		purple below.	
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain	Digital Domain
		LNA Full-Band Capture	Demods xN All Digital Tuner
		(ENTROPIC_COX_002010 at ENTROPIC	C_COX_002012, annotated)
		1	n regarding implementation and identification of the and/or other instrumentalities used to implement the
			is obtained through discovery related to the Accused
		Services and related instrumentalities, Entr	
33b	each digital demodulator, of the	, 1	of digital demodulators, is operable to demodulate a
	plurality of digital demodulators,	desired channel, of the plurality of desired	channels as described below.
	is operable to demodulate a desired channel, of the plurality of	Specifically the Arris AV012ANM has an	plicable circuitry and/or software modules constitut-
	desired channels.	1 -	ple, the Arris AX013ANM, via applicable circuitry
	desired channels.		SoC, has a plurality of demodulators, highlighted in

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 12 of 26 Page ID #:2039

#	U.S. Patent No. 11,381,866	Accused Products and Services
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip tech-
		nology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant,
		providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive
		diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24
		downstream channels."
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limi-
		tations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition
		technology, video channels can be pre-tuned and users can enjoy the experience of Broadcom's
		FastRTV TM fast channel change technology."
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		Discovery will provide detailed information regarding implementation and identification of the
		specific components, source code, software and/or other instrumentalities used to implement the
		claimed method. As additional information is obtained through discovery related to the Accused
		Services and related instrumentalities, Entropic will supplement these contentions.
36	36. The cable TV device of claim	The DFE is operable to provide the plurality of desired channels via a serial interface as de-
	27, wherein: the DFE is operable	scribed below.
	to provide the plurality of desired	
	channels via a serial interface.	More specifically, the Arris AX013ANM, using its applicable circuity and/or software modules,
		outputs the digital datastream from a filter to one or more demodulators. On informed belief, the
		digital datastream is output via a serial interface. For example and on informed belief, the Arris
		AX013ANM, using applicable circuitry and/or software modules contained in the BCM33843
		Full-Band Capture SoC, outputs the digital datastream from the filter (highlighted below in
		green) to the demodulators (highlighted below in purple) via a serial interface.

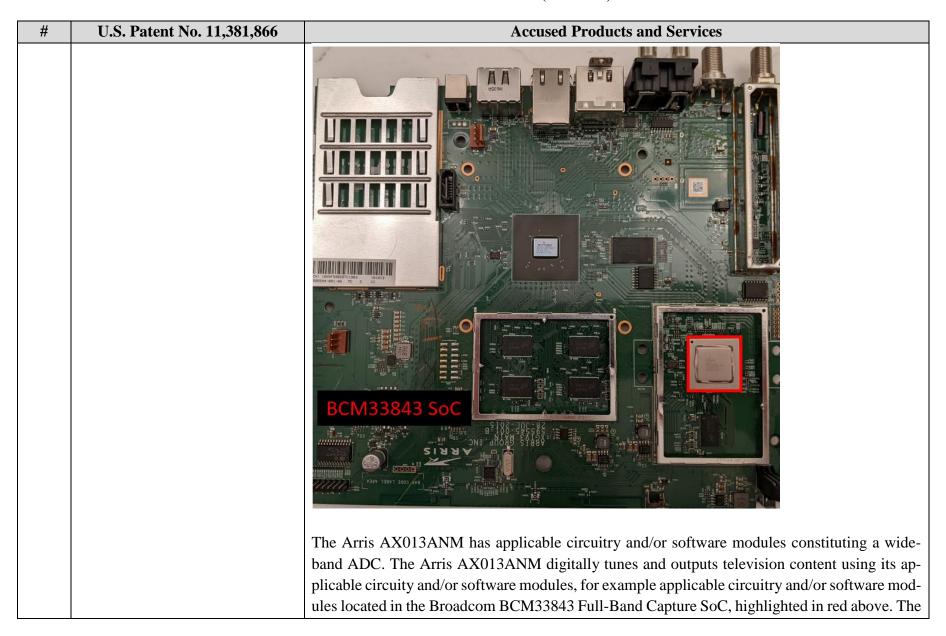
#	U.S. Patent No. 11,381,866	Accused Products and Services
		Full-Band Capture Digital Tuner Architecture
		Analog Domain Digital Domain
		LNA Demods xN All Digital Tuner
		(ENTROPIC_COX_002010 at ENTROPIC_COX_002012, annotated)
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
37	37. The cable TV device of claim 27, wherein: the plurality of desired channels comprises at least	The plurality of desired channels comprises at least one cable broadcast channel as described below.
	one cable broadcast channel.	Specifically, the Arris AX013ANM provides cable television services, including viewing and recording of desired television content. The plurality of desired channels includes at least this desired television content, which constitutes at least one cable broadcast channel.
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 14 of 26 Page ID #:2041

#	U.S. Patent No. 11,381,866	Accused Products and Services
.,		diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24 downstream channels." (ENTROPIC_COX_002016 at ENTROPIC_COX_002018) "Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned and users can enjoy the experience of Broadcom's FastRTV TM fast channel change technology." (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		Arris XG1v3 High Definition DVR Receiver Share or Print This Article ■ ■ ■
		Receiver Capabilities HD Capable Up to 6 simultaneous DVR recordings Up to 1000 hours of SD recording Up to 500 hours of HD recording Note: Estimated storage will vary with a mix of HD and SD recordings. (ENTROPIC_COX_001968 at ENTROPIC_COX_001968)

#	U.S. Patent No. 11,381,866	Accused Products and Services
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
41pre	41. A cable TV device comprising:	The Accused Services utilize the claimed cable TV device by using, for example, the Accused Set Top Products, which include at least one set top box ("STB") located at each subscriber location, including, for example, the Arris AX013ANC STB, Arris AX013ANM STB, Pace PX022ANC STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung SX022ANM STB, and products that operate in a similar manner. By way of example, the Arris AX013ANM is charted herein. As described below, the Arris AX013ANM has a Broadcom BCM33843 SoC. On informed belief, the Arris AX013ANM is representative of all Accused Set Top Products, including those having BCM3383, BCM3384, BCM33843, or BCM3390 SoCs.
41a	a wideband analog-to-digital converter (ADC) configured to digitize an input signal, wherein the input signal comprises a plurality of desired channels and a plurality of undesired channels; and	The Accused Set Top Products include a wideband analog-to-digital converter (ADC) configured to digitize an input signal, wherein the input signal comprises a plurality of desired channels and a plurality of undesired channels as described below.

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 16 of 26 Page ID #:2043



#	U.S. Patent No. 11,381,866	Accused Products and Services
		Arris AX013ANM has full band capture digital tuning technology and remote diagnostics that
		directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing
		access to any channel anywhere. The entire downstream spectrum includes a plurality of desired
		channels and a plurality of undesired channels.
		"The new BCM3384 DOCSIS®/Euro-DOCSIS™ 3.0 cable gateway SoC combines Broadcom's
		Full-Band Capture (FBC) digital tuning technology with remote diagnostics, dual-band concur-
		rent Wi-Fi, a custom, dedicated applications processor and integrated DECT 6.0 CAT-iq 2.0
		Broadcom's new BCM33843 is pin compatible Broadcom is now sampling [as of Jan 08,
		2013] the BCM3384 and BCM33843"
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002017)
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip tech-
		nology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant,
		providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive
		diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24 downstream channels."
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		Discovery will provide detailed information regarding implementation and identification of the
		specific components, source code, software and/or other instrumentalities used to implement the
		claimed method. As additional information is obtained through discovery related to the Accused
		Services and related instrumentalities, Entropic will supplement these contentions.
41b	a plurality of digital down con-	The Accused Set Top Products include a plurality of digital down converters coupled to the
	verters coupled to the wideband	wideband ADC, wherein each digital down converter, of the plurality of digital down converters,
	ADC, wherein each digital down	is operable to generate a digital channel output corresponding to each desired channel, of the
	converter, of the plurality of digi-	plurality of desired channels, and wherein the cable TV device comprises a digital video recorder
	tal down converters, is operable to	(DVR) as described below.

#	U.S. Patent No. 11,381,866	Accused Products and Services	
	generate a digital channel output		
	corresponding to each desired	Specifically, the Arris AX013ANM has applicable circuitry and/or software modules constitut-	
	channel, of the plurality of desired	ing a plurality of digital down converters coupled to the wideband ADC. The Arris AX013ANM	
	channels, and wherein the cable	has applicable circuitry and/or software modules, for example including applicable circuit	itry
	TV device comprises a digital	and/or software modules located in the BCM33843 SoC, providing full band capture dig	ital
	video recorder (DVR).	tuning technology that directly samples and digitizes the entire 1GHz downstream spectrum	ı of
		a cable plant, providing access to any channel anywhere. On informed belief, at least this ap	-
		cable circuitry and/or software modules of the Arris AX013ANM constitutes digital down c	
		verters operable to generate a digital channel output corresponding to each desired channel	
		the plurality of desired channels. The Arris AX013ANM is a DVR that can record programm	ing
		on its hard drive.	
		Full Board Continue Binital Tunos Anabitantum	
		Full-Band Capture Digital Tuner Architecture	
		Analog Domain Digital Domain Demods xN All Digital Tuner	
		(ENTROPIC_COX_002010 at ENTROPIC_COX_002012)	
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip tech-	
		nology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant,	
		providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive	
		diagnostic and spectrum analysis capabilities, without effecting user service on any of the	24
		downstream channels."	
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002018)	

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 19 of 26 Page ID #:2046

#	U.S. Patent No. 11,381,866	Accused Products and Services
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned and users can enjoy the experience of Broadcom's FastRTV TM fast channel change technology." (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		Arris XG1v3 High Definition DVR Receiver
		Share or Print This Article
		Details
		CONTOUR CO
		Receiver Capabilities
		✓ HD Capable
		✓ Up to 6 simultaneous DVR recordings✓ Up to 1000 hours of SD recording
		✓ Up to 500 hours of HD recording
		Note: Estimated storage will vary with a mix of HD and SD recordings.
		(ENTROPIC_COX_001968 at ENTROPIC_COX_001968)
		Discovery will provide detailed information regarding implementation and identification of the
		specific components, source code, software and/or other instrumentalities used to implement the

#	U.S. Patent No. 11,381,866	Accused Products and Services	
		claimed method. As additional information is obtained through discovery related to the Accused	
		Services and related instrumentalities, Entropic will supplement these contentions.	
42pre	42. The cable TV device of claim	See 41pre.	
	41, wherein:		
42a	the cable TV device comprises a	The cable TV device comprises a cable network connector as described below.	
	cable network connector, and		
		Specifically, the Arris AX013ANM has a cable network connector, shown in blue in the follow-	
		ing annotated photograph.	

#	U.S. Patent No. 11,381,866	Accused Products and Services
		BCM33843 SoC RF Input
42b	the input signal is operably com-	The input signal is operably communicated from the cable network connector to the wideband
	municated from the cable network	ADC via at least one of an analog amplifier and an analog filter as described below.
	connector to the wideband ADC	
	via at least one of an analog ampli-	Specifically, the Arris AX013ANM has applicable circuitry and/or software modules constitut-
	fier and an analog filter.	ing at least an analog amplifier. For example, the Arris AX013ANM, via applicable circuitry

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 22 of 26 Page ID #:2049

#	U.S. Patent No. 11,381,866	Accused Products and Services	
		and/or software modules of its BCM33843 SoC, has at least an analog amplifier, highlighted in yellow below.	
		, ·· · · · · · · · · · · · · · · ·	
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain LNA LNA LNA Carter And Capture	Digital Domain Demods xN All Digital Tuner
		specific components, source code, sof claimed method. As additional inform	mation regarding implementation and identification of the tware and/or other instrumentalities used to implement the nation is obtained through discovery related to the Accused, Entropic will supplement these contentions.
47	47. The cable TV device of claim 41, wherein: each digital down converter comprises a digital de- modulator operable to demodulate	channel, of the plurality of desired channels, to provide a demodulated channel as the digital channel output as described below.	
	a desired channel, of the plurality of desired channels, to provide a demodulated channel as the digital channel output.	ing a plurality of demodulators. For and/or software modules of its BCM3	example, the Arris AX013ANM, via applicable circuitry 33843 SoC, has a plurality of demodulators, highlighted in odulate the desired channels and provide the demodulated

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 23 of 26 Page ID #:2050

#	U.S. Patent No. 11,381,866	Accused Pr	oducts and Services
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain	Digital Domain
		LNA Part Capture	Demods xN All Digital Tuner
		(ENTROPIC_COX_002010 at ENTROPIC	C COX 002012, annotated)
		(,,
		nology directly samples and digitizes the exproviding access to any channel anywhere.	egy and remote diagnostics: Integrated on-chip techentire 1GHz downstream spectrum of a cable plant, Remote diagnostics provides real time, unobtrusive ies, without effecting user service on any of the 24 C_COX_002018)
		tations of "block" tuners. When combined w	
		_	n regarding implementation and identification of the and/or other instrumentalities used to implement the

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 24 of 26 Page ID #:2051

#	U.S. Patent No. 11,381,866	Accused Products and Services	
		claimed method. As additional information is obtained through discovery related to the Accused	
		Services and related instrumentalities, Entropic will supplement these contentions.	
41, wherein: the plurality of digital down converters is operable to provide each digital channel output via a serial interface. More specifically, the Arris AX013ANM, using its applicable outputs a digital datastream from a filter to one or more demodigital datastream is output via a serial interface. For example AX013ANM, using applicable circuitry and/or software modu Full-Band Capture SoC, outputs the digital datastream from green) to the demodulators (highlighted below in purple) via a		The plurality of digital down converters are operable to provide each digital channel output via a serial interface as described below. More specifically, the Arris AX013ANM, using its applicable circuity and/or software modules, outputs a digital datastream from a filter to one or more demodulators. On informed belief, the digital datastream is output via a serial interface. For example and on informed belief, the Arris AX013ANM, using applicable circuitry and/or software modules contained in the BCM33843 Full-Band Capture SoC, outputs the digital datastream from the filter (highlighted below in green) to the demodulators (highlighted below in purple) via a serial interface. Full-Band Capture Digital Tuner Architecture	
		Analog Domain Digital Domain Demods xN (ENTROPIC_COX_002010 at ENTROPIC_COX_002012, annotated)	
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.	

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 25 of 26 Page ID #:2052

#	U.S. Patent No. 11,381,866	Accused Products and Services
51	51. The cable TV device of claim	The plurality of desired channels comprises at least one cable broadcast channel as described
	41, wherein: the plurality of de-	below.
	sired channels comprises at least	
	one cable broadcast channel.	Specifically, the Arris AX013ANM provides cable television services, including viewing and
		recording of desired television content. The plurality of desired channels includes at least this
		desired television content, which constitutes at least one cable broadcast channel.
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology and digital and
		nology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive
		diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24
		downstream channels."
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		(
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limi-
		tations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition
		technology, video channels can be pre-tuned and users can enjoy the experience of Broadcom's
		FastRTV TM fast channel change technology."
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002018)

Case 2:23-cv-01049-JWH-KES Document 114-19 Filed 11/13/23 Page 26 of 26 Page ID #:2053

